

Monopulse Beacon Test Set (MBTS)

Purpose: The purpose of the MBTS is to provide a field portable and remotely operable maintenance, certification, and performance optimization device to service the large contingent of monopulse beacon radars in the NAS System.

Current (Mode S) and future (ASR-11 and ATCBI-6) Secondary Surveillance Radars (SSRs) will employ monopulse receiving techniques. The current ATCBI test sets do not support the FAA maintenance and certification requirements for monopulse performance. Also, parts obsolescence in BI-5 Test Sets are increasingly becoming a logistics support problem. In performance issues, the current ATCBI test set does not provide the Federal Aviation Administration (FAA) maintenance technician with a remote means to perform SSR Overall System Sensitivity (OSS) performance optimization at the TRACON or ARTCC site.

Background

By the year 2005, all the ATCBI radars will be monopulse systems, capable of working with both ATCRBS and Mode S transponders. The ATCBI test sets in use today do not support: the maintenance and certification requirements of current and future generation beacon systems; the processing of Mode S data; nor, can they be operated remotely. To provide a state-of-the-art Monopulse Beacon Test Set, a two-stage solicitation/award program was implemented. It authorized two concurrent

development efforts (awarded to Freestate Electronics and Electronic Warfare Associates), to be followed by one production effort resulting in a production Monopulse Beacon Test Set for field operations. The estimated field requirement is 450 production units. Capabilities will include:

- Generation of up to 32 ATCRBS and/or Mode S compliant targets per scan (up to 255 nmi. in range)
- Continuous wave (CW) and pulsed wave RF operating modes.
- Trigger of pulsed signals or target reports by: internal, external, or decoded RF interrogations.
- Azimuth synchronized to antenna pedestal data (ACP and ARPs).
- GPIB control of MBTS functionality from either an external host computer, the ATCBI-6, or via NIMS (through the ATCBI-6).

Key Projects

Phase I. A competitive procurement for the design, development and testing of two, first article, MBTS systems, leading to a run-off for the Phase II production award.

Phase II. Award of a production contract, based on the Phase I test and evaluation results, to the vendor that provides the best MBTS value to the Government.

Key Accomplishments

- Award of two Phase I contracts to develop, test and evaluate two MBTSs on January '99 to Freestate Electronics Inc. and EWA Laboratories Inc.



Status

- Currently, the MBTS is in the initial stages of the Phase I program, wherein the development of two, concurrent, first article MBTSs is underway.

Plans

- Deliver MBTS First Articles for testing and complete testing by Dec. '99.
- Complete FAA IOT&E by March '00.
- Final production contract price proposals, and Government exercise selection options by April '00.
- Begin delivery of MBTS Production Units by September '00.

To find out more about the Monopulse Beacon Test Set Program contact:

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